

## TEST REPORT

No. : XMIN1708005387PS

Date : Sep 13, 2017

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CUSTOMER NAME: JIANGXI ALUTILE BUILDING MATERIALS CO., LTD.  
ADDRESS: NO.1155, 2<sup>ND</sup> CHUANGXIN ROAD, STATE HIGH-TECH. INDUSTRY DEVELOPMENT ZONE, NANCHANG, JIANGXI, CHINA

Sample Name : ALUTILE ALUMINUM CORE PANEL(3A PANEL)  
Product Specification : Thickness 4.0mm  
Manufacturer : Jiangxi ALUTILE Building Materials Co., Ltd.  
Buyer : Jiangxi ALUTILE Building Materials Co., Ltd.  
Material and Mark : Aluminum

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

\*\*\*\*\*

SGS Ref. No. : SDHL1708017725FB  
Date of Receipt : Aug 15, 2017  
Testing Start Date : Aug 15, 2017  
Testing End Date : Sep 04, 2017  
Test result(s) : For further details, please refer to the following page(s)  
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for  
SGS-CSTC Standards Technical  
Services Co., Ltd Xiamen Branch  
Testing Center



Ray Wu  
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.  
Xiamen Branch Testing Center Commercial Construction Material Laboratory

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## Test Result Summary

Test(s) Requested	Result(s)
EN 13501-1:2007+A1:2009	Classification: A2-s1, d0

### Summary:

1. For further details, please refer to the following page(s).



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## TESTS AND RESULTS

### Test Conducted:

This test is conducted as per EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements -Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN ISO 1716:2010 Reaction to fire tests for products -Determination of the gross heat of combustion. (Calorific Value)
2. EN 13823:2010 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.

### Mounting and fixing (For EN 13823):

The specimen was tested free standing at a distance of at least 80 mm from the backing board. Both wings were clamped at the top and the bottom.

### Test Results:

Test method	Parameter	Number of tests	Results
EN ISO 1716:2010	For external non-substantial component(Face Coating): Heat of Combustion-PCS (MJ/m <sup>2</sup> )	3	0.1
	For internal non-substantial component(Film): Heat of Combustion-PCS (MJ/m <sup>2</sup> )		4.4
	For external non-substantial component(Back Coating): Heat of Combustion-PCS (MJ/m <sup>2</sup> )		0.01
	For substantial components(Aluminum panel): Heat of Combustion -PCS (MJ/kg)		0
	The product as a whole: Heat of Combustion -PCS (MJ/kg)		1.4



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Test method	Parameter	Number of tests	Results
EN 13823:2010	FIGRA <sub>0.2MJ</sub> (W/s)	3	58.9
	THR <sub>600s</sub> (MJ)		1.9
	SMOGRA (m <sup>2</sup> /s <sup>2</sup> )		1.7
	TSP <sub>600s</sub> (m <sup>2</sup> )		8.9
	LFS < edge of specimen		Yes
	Flaming particles or droplets		No

Remark:

FIGRA-Fire growth rate index used for classification purposes [W/s]

For the classes A2 and B, FIGRA<sub>0.2MJ</sub>

For the classes C and D, FIGRA<sub>0.4MJ</sub>

LFS -Lateral flame spread m

THR<sub>600s</sub>-Total heat release within 600 s MJ

SMOGRA -Smoke growth rate [m<sup>2</sup>/s<sup>2</sup>]

TSP<sub>600s</sub> -Total smoke production within 600 s m<sup>2</sup>

PCS -gross heat of combustion [MJ/kg or MJ/m<sup>2</sup>]

**Classification and direct field of application:**

This classification has been carried out in accordance with EN 13501-1:2007+A1:2009.

**Classification:**

Fire behaviour		Smoke production			Flaming droplets	
A2	—	s	1	,	d	0

**Reaction to fire classification: A2-s1, d0**

**Remark:**

The classes with their corresponding fire performance are given in Table 1.

Reaction to fire classification is based on the 7-step scale of A1 to F, where A1 is good and F is bad

**Statement:**

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



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**Warning:**

This classification report does not represent type approval or certification of the product. The test laboratory has, therefore, play no part in sampling the product for the test, although it holds appropriate references to the manufacturer's factory production control that is aimed to be relevant to the samples tested and that will provide for their traceability.

Table 1 — Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products.

Class	Test method(s)	Classification criteria	Additional classification
A1	EN ISO 1182 <sup>a</sup> and	$\Delta T \leq 30^\circ\text{C}$ , and $\Delta m \leq 50\%$ , and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0\text{MJ/kg}$ <sup>a</sup> and $PCS \leq 2.0\text{MJ/kg}$ <sup>b,c</sup> and $PCS \leq 1.4\text{MJ/m}^2$ <sup>d</sup> and $PCS \leq 2.0\text{MJ/kg}$ <sup>e</sup>	-
A2	EN ISO 1182 <sup>a</sup> or	and $\Delta T \leq 50^\circ\text{C}$ , and $\Delta m \leq 50\%$ , and $t_f \leq 20\text{ s}$	-
	EN ISO 1716		$PCS \leq 3.0\text{MJ/kg}$ <sup>a</sup> and $PCS \leq 4.0\text{MJ/m}^2$ <sup>b</sup> and $PCS \leq 4.0\text{MJ/m}^2$ <sup>d</sup> and $PCS \leq 3.0\text{MJ/kg}$ <sup>e</sup>
	EN 13823	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>





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Class	Test method(s)	Classification criteria	Additional classification
B	EN 13823 and	FIGRA $\leq$ 120W/s and LFS<edge of specimen and THR600s $\leq$ 7.5MJ	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure =30s	Fs $\leq$ 150mm within 60 s	
C	EN 13823 and	FIGRA $\leq$ 250W/s and LFS<edge of specimen and THR600s $\leq$ 15MJ	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure=30s	Fs $\leq$ 150mm within 60 s	
D	EN 13823 and	FIGRA $\leq$ 750W/s	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure=30s	Fs $\leq$ 150mm within 60 s	
E	EN ISO 11925-2 <sup>i</sup> Exposure =15s	Fs $\leq$ 150mm within 20 s	flaming droplets/particles <sup>h</sup>
F	No performance determined		

<sup>a</sup> For homogeneous products and substantial components of non-homogeneous products.

<sup>b</sup> For any external non-substantial component of non-homogeneous products.

<sup>c</sup> Alternatively, any external non-substantial component having a PCS  $\leq$  2,0 MJ/m<sup>2</sup>, provided that the product satisfies the following criteria of EN 13823: FIGRA  $\leq$  20 W/s, and LFS < edge of specimen, and THR<sub>600s</sub>  $\leq$  4,0 MJ, and s1, and d0.

<sup>d</sup> For any internal non-substantial component of non-homogeneous products.

<sup>e</sup> For the product as a whole.

<sup>f</sup> In the last phase of the development of the test procedure, modifications of the smoke measurement system have been introduced, the effect of which needs further investigation. This may result in a modification of the limit values and/or parameters for the evaluation of the smoke production.



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s1 = SMOGRA  $\leq 30\text{m}^2/\text{s}^2$  and TSP<sub>600s</sub>  $\leq 50\text{m}^2$ ; s2 = SMOGRA  $\leq 180\text{m}^2/\text{s}^2$  and TSP<sub>600s</sub>  $\leq 200\text{m}^2$ ; s3 = not s1 or s2

<sup>g</sup> d0 = No flaming droplets/ particles in EN 13823 within 600 s;

d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;

d2 = not d0 or d1.

Ignition of the paper in EN ISO 11925-2 results in a d2 classification.

<sup>h</sup> Pass = no ignition of the paper (no classification);

Fail = ignition of the paper (d2 classification).

<sup>i</sup> Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

Note: The above test was carried out by SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch.

### SAMPLE INFORMATION AND PICTURES

Area density of the product: About 6.5kg/m<sup>2</sup>

Thickness: About 3.8mm

Area density of the face coating\*: 0.005kg/m<sup>2</sup>

Area density of the film\*: 0.1kg/m<sup>2</sup>

Area density of the back coating\*: 0.001kg/m<sup>2</sup>

Remark:\* - Provided by the client



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<p>Back coating</p>	<p>Aluminum panel</p>
	
<p>Before test(for EN 13823)</p>	<p>After test(for EN 13823)</p>

\*\*\*\*\* End of report\*\*\*\*\*



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